Summary of Forest Plan Direction

***examples ofthepossible Fourmile Project Forest Plan variances are explained on the last page.**

Table 1:Forest Plan (FP) standards (S) and guidelines (G)

	This document lists the Forest Plan Standards and Guidelines, State Best Management Practices and project guidelines that will be employed during harvesting, reforestation, road work, and prescribed burning operations unless variance is explicitly outlined. In other words, the direction in this document is applicable to all proposed actions and would be required during implementation of the proposed management activities. Forest Plan operational standards and guidelines are outlined in silvicultural prescriptions, marking plans, cruise plans, and burn plans. Personnel use these practices during on-the-ground work laying out treatment units, administering timber sales, prescribed burning, and reforestation activities. Standards (S) are required limits to activities. These limitations help the Forest to reach the desired conditions and objectives. Standards also ensure compliance with laws, regulations, executive orders, and policy direction. Guidelines (G) are preferable limits to management actions that may be followed to achieve desired conditions. Guidelines are generally expected to be carried out but provide for some operational flexibility in responding to variation over time. The Chequamegon-Nicolet National Forest implements the Wisconsin Best Management Practices (BMP) when managing forest resources. Forest Plan standards and guidelines are intended to provide equal or greater protection than BMP guidelines. BMP guidelines may be modified if the proposed change provides equal or greater benefits to forest resources.
Water Resources (FP pages 2-1 to 2-3)	
Watershed Protection and Management	
S1	Maintain minimum in-stream flows at 25% of base flows or that flow determined from a site specific analysis using commonly accepted in-stream flow methods.
G1	Maintain water quality by following guidelines contained in “Wisconsin’s Forestry Best Management Practices for Water Quality,” (BMPs), 2010 edition (or subsequent revisions)
G2	Utilize the “Wisconsin Construction Site Best Management Practices Handbook” as well as the “Best Management Practices for Erosion and Sedimentation Control,” (Federal Highway Administration) for guidance on limiting sedimentation.
G3	Ensure revegetation of log landings after project activities are completed, either through artificial means or natural

	revegetation.
G4	Utilize Wisconsin's Forestry BMPs to maintain soil productivity, infiltration rates and minimize road maintenance costs.
Riparian Areas	
S2	Design and maintain roads and trails in riparian areas or other locations that could affect water quality, in accordance with Wisconsin's Forestry Best Management Practices. Road and trail surfaces within these areas will be stabilized with aggregate or other suitable material when being used during non-frozen conditions.
G6	Do not pile slash within or move slash into riparian areas. Keep slash out of lakes, stream channels, floodplains, and areas where it may be swept into streams, rivers, and lakes.
G7	Utilize Wisconsin's Forestry Best Management Practices (BMPs) for riparian management zone categories. Expand riparian management zones wider than those defined in Wisconsin's Forestry BMPs and modify management practices where necessary (e.g., projects on steep slopes and/or highly erodible soils).
G8	Protect warm and cold-water streams from sedimentation by maintaining the physical integrity of intermittent and non-navigable streams, i.e., streams that do not appear on 1:24,000 topographic maps to ensure their continued function when they do contain water.
G10	Provide and maintain conifer thermal cover within riparian areas.
G11	Avoid stream and wetland crossings and riparian areas when constructing new roads and trails.
G12	Relocate existing roads and trails out of riparian areas and eliminate stream crossings where practicable. Otherwise, construct or reconstruct roads, trails and associated stream crossings to minimize erosion, sedimentation and riparian impacts. Design culverts and bridges to pass the estimated 100-year flood.
Wetlands	
S3	Protect hydrologic function and maintain natural hydrologic regimes.
G13	Utilize guidelines found in Wisconsin's Forestry BMPs to maintain water quality and hydrologic wetland functions during activities such as timber harvesting or road and trail construction.
G14	Minimize fill and maintain cross road drainage when wetland road and trail crossings cannot be avoided.
Soils (FP page 2-3)	
Soils	
G15	Use R9 directive for Chapter 2 of Forest Service Handbook 2509.18 to define detrimental disturbance threshold values for soil displacement, erosion, rutting, nutrient loss, compaction, burning, and maintaining ground cover.

G17	Minimize topsoil displacement into piles or windrows when machine piling slash and debris.
G18	Designate the location of roads, trails, landings, main skid trails, and similar soil disturbing activities. Stabilize disturbed sites during use and revegetate after use to control erosion.
G19	Operate heavy equipment only when soils are not saturated or when the ground is frozen. (Follow the Recommended Operating Season column in Appendix A to apply this guideline by stand and soil type, e.g. Winter Only, Winter or dry summer/fall etc.)
Biological Resources (FP pages 2-3 to 2-4)	
Biological Diversity	
G21	Promote and maintain long-lived conifer super canopy trees, especially white pine.
G22	Maintain stand level ecosystem components, patterns, and pit and mound microtopography.
G23	Allow botanical collections of voucher and herbaria specimens.
G25	Avoid modifying microclimate and microhabitat conditions within steep ravines, cliffs, talus slopes, and areas of exposed bedrock.
G26	Design management activities adjacent to research natural areas, special management areas, and old growth areas to complement their ecological values.
G27	Manage vegetation within utility right of way corridors, where permitted, to support landscape level ecological goals including wildlife populations and habitat.
Vegetation Management (FP pages 2-4 to 2-5)	
Temporary Openings	
G28	Temporary openings will not exceed 40 acres in size except: Within Management Areas 4C and 8C.
G31	A stand is considered a temporary opening if the average crown closure is less than 20% or the regeneration averages less than 12 feet tall.
G32	Within areas other than those listed above, separate two or more openings with a total area exceeding 40 acres by manageable stands at least 10 acres in size with an average width of at least 500 feet.
Rotation Lengths	
G33	Table 2-1 (page 2-4) lists the minimum, standard, and extended rotation lengths for various forest types. Rotation age will be determined by the capability of a site. As a general rule the standard rotation ages will be used except in Management Areas 2B, 3B, 4B and 6B where the extended rotation ages will be used.
Regeneration and Intermediate Treatments	
Regeneration and Intermediate Treatments	

G35	Use tree seedlings or seed where seed source is known and produced from seed collected within the climatic zone in which they will be planted.
G36	Plant conifers at a minimum seedling density of 680 seedlings per acre in open areas, except plant white pine at 900 seedlings per acre within open areas.
G37	Use natural regeneration whenever feasible.
Silvicultural Maintenance and Conversion of Forest Cover Types (FP pages 2-5 to 2-13)	
Aspen	
G39	Manage aspen under the even-aged silvicultural system.
G40	Follow table 2-2 on page 2-5 of the Forest Plan for the desired aspen age class distribution.
G41	Harvest aspen during the dormant season where the aspen species is desired and aspen totals less than 40 square feet of basal area in the stand.
G42	Site preparation for natural aspen regeneration should reduce the site's average residual crown cover (2" in diameter or larger) to less than 5% (excluding reserve islands) within all Management Areas except 1B, 2A, and 2B. The average residual crown cover for site preparation for aspen regeneration with Management Areas 1B, 2A, and 2B (in instances where aspen is to be maintained) is allowed to approach 10% (excluding reserve islands).
G44	Do not apply treatments that support an increase in beaver populations adjacent to northern white-cedar stands.
G45	Avoid clearcutting aspen adjacent to areas where white pine or hemlock regeneration is present or desired.
Paper Birch	
G48	Notify the Great Lakes Indian Fish and Wildlife Commission (GLIFWC) about potential bark gathering opportunities when identifying paper birch for harvest.
G50	Prioritize the harvest of declining paper birch stands, consistent with management area direction and other resource needs.
Northern Hardwoods	
G51	Do not harvest yellow birch within the northern hardwood ecosystem unless its density must be lowered to facilitate recommended residual basal area, its regeneration is facilitated with canopy gaps, nurse logs, and/or planting, and sufficient seed source remains to take advantage of regeneration opportunities.
G52	Retain butternut trees with more than 70% live crown, and when cankers affect less than 20% of the combined circumference of the bole and root flares. Retain butternut trees that have no cankers and at least 50% live crown. Dead or poor vigor butternut trees may be harvested.
G53	Maintain shade on and around large boulders, 10 feet in diameter and larger, by not establishing canopy gaps near them.
Uneven-aged Management of Northern Hardwoods	
G54	Utilize uneven-aged management prescriptions to develop stands that have at least three distinct age classes.
G55	Initial cuts in pole-sized hardwood stands should combine a crop tree release of 50-60 crop trees per acre with the creation of regeneration canopy gaps. Trees removed are generally high risk, have poor stem quality, and/or provide growing space

	for better quality residual trees.
G56	Between canopy gaps, thin to the minimum stocking levels shown in Figures FF-1, FF-2 or FF-3 in Appendix FF, when converting from even-age northern hardwoods to uneven-aged northern hardwood management . These figures are based on maintaining at least an 80% crown closure. Exception to this guideline: Initial thinnings in northern hardwood stands result in a crown closure of 75-80%. Tree crowns in these stands close in within a few years.
G57	Create four to eight 25 to 40-foot wide canopy gaps per acre by harvesting groups of pole-sized trees or 1-2 large-crowned trees. The percentage of area in canopy gaps is a function of the harvest interval (longer harvest intervals should have a higher percentage of canopy gaps as a general rule). Create a maximum of one, 60-foot canopy gap for every two acres, where maintenance of mid-tolerant species composition is desired (the 60-foot gap replaces some of the 25 to 40-foot gaps). The addition of the larger gap will reduce the number of smaller gaps to 3-6 per acre.
G58	Cut poor-quality stems larger than one inch in diameter in canopy gaps so vigorous regeneration can develop.
G59	After the initial improvement or selection harvest, periodically apply selection harvests that work toward the size class distribution shown in Tables 2-4 or 2-5. Create canopy gaps by harvesting large enough groups of trees to obtain successful regeneration in younger stands where crown sizes are small to moderate in size.
G60	Specify post-harvest stocking levels for various size classes in prescriptions. The following tables show the ideal size distribution for fully regulated uneven-aged northern hardwood stands (these tables will be used to guide the development of harvest prescriptions): (See tables 2-4 and 2-5 on page 2-8). The target distribution displayed in Table 2-5 will normally be applied for uneven-aged hardwood sites within Management Areas 2B, 3B, 4B, and 6B; while distribution displayed in Table 2-4 will generally be used for uneven-aged hardwoods in other MAs. Reserve tree numbers, as described in MA direction, Chapter 3, are included in the desired size class structure displayed in tables 2-4 and 2-5. These tables may be modified for project level decisions, as long as the intent of the management area prescription is met.
G61	Reserve hemlock in northern hardwood prescriptions. The following are exceptions to this guideline: (1) Hemlock trees may be cut if they impede road or skid trail development, and (or) safety problems are improved; and (2) On the Medford land base, (LTAs 212Xd05 and 212Xe05) thinning of hemlock clumps within northern hardwood stands (greater than 10% hemlock) is allowed when there is established hemlock regeneration, or hemlock regeneration efforts are planned within or adjacent to these clumps. Where hemlock regeneration is established, it will be protected and encouraged through site-specific protection measures.
G62	Maintain an 80% crown closure in order to avoid light level changes that result in soil temperature increases, and humidity and soil moisture decreases. See initial thinning crop tree release guidance for exceptions to this guideline.
G63	Avoid converting rich northern hardwood sites to other forest types.
Red Oak Group (northern red oak and pin oak)	
G74	Manage red oak stands under an even-aged silvicultural system using thinning and shelterwood harvesting methods.

G77	Reduce gypsy moth impacts by avoiding the development of pure red oak stands. Grow red oak with a mix of other mid to intolerant tree species such as white ash, paper birch, and red pine.
G78	Limit harvesting or pruning in the red oak group to the period between October 1 and April 15 to reduce risk of oak wilt infections.
G79	Obtain a residual basal area between 70 and 90 square feet in intermediate harvests. Harvesting should improve spacing, favor the development of quality crop trees, and maintain within stand diversity.
G80	Use mechanical scarification or prescribed fire to control understory competition and prepare a seedbed for natural regeneration when advanced regeneration is not present.
G81	Regenerate red oak using a shelterwood system that leaves 40 to 60% crown cover (large crowns, good form, and uniform spacing). Remove the overstory when red oak regeneration is two to four feet tall.
Red Pine	
G82	Utilize an even-aged silvicultural prescription for managing red pine.
G85	Conduct the first commercial thinning when operable red pine stand volumes are available. Thereafter, red pine thinnings should occur every 7-15 years. Do not remove more than 40% of the basal area (except the first thinning). Thin to the following residual basal areas: (see table 2-9 on page 2-10)
Jack Pine	
G88	Utilize an even-aged silvicultural prescription for managing jack pine.
G90	Harvest of declining jack pine stands is a high priority.
G91	Regenerate jack pine by clearcut harvesting followed by natural or artificial reforestation. Consider the genetic quality of existing jack pine stands when deciding whether to use natural or artificial reforestation methods.
Balsam Fir	
G94	Utilize an even-aged silvicultural prescription for managing balsam fir.
G96	When balsam fir is the objective, and where it has developed advanced understory regeneration, remove the overstory when the understory is in the seedling/sapling stage.
White Pine	
G98	Utilize an even-aged silvicultural prescription for managing white pine.
G100	Begin intermediate thinnings as soon as operable volumes are available. Thin at 10-15 year intervals to a residual basal area between 100 and 150 square feet per acre (70%-90% crown closure).

G101	Use a two-cut shelterwood system (seed cut and removal cut) to regenerate white pine stands at rotation age. The seed cut should retain a residual crown cover of 40-70%. Use the lower level when competition from low shade is not expected. Conduct site preparation immediately prior to or after the seed cut to: (1) scarify 35-50% of the area (mixing humus and mineral soil); and (2) remove undesirable and unmerchantable trees. Removal harvest should occur when regeneration is about 20-25 feet tall.
G102	When establishing white pine: Plant white pine with blister rust resistance.
G103	When establishing white pine: Retain a crown closure of about 40% in underplanted white pine stands until the overstory is removed.
G104	When establishing white pine: Remove overstory when saplings are 20-25 feet tall.
G105	When establishing white pine: Underplant white pine at a minimum of 100 seedlings per acre (20-foot spacing) for species diversity and at a minimum of 435 per acre (10-foot spacing) for stand replacement.
G106	Accomplish blister rust pathological pruning when trees are in the seedling/sapling stage (3-10 feet tall).
White Spruce	
G109	Manage white spruce under an even-aged silvicultural system using intermediate thinnings, and either final harvest or shelterwood harvest followed by artificial or natural regeneration.
G112	Begin thinnings as soon as operable volumes are available. Thin at 10-20 year intervals to a residual basal area of between 100 and 120 square feet per acre. Do not remove more than 40% of the basal area in any single harvest.
Mixed Lowland Conifers, Lowland Hardwoods, and Hemlock *	
G115	Do not attempt natural or artificial hemlock regeneration within deer yards unless protection measures such as fencing are utilized.
	**See Aspen Vegetative Management Guidelines for management direction adjacent to northern white cedar stands. See Uneven-aged Management of Northern Hardwoods Guidelines for hemlock protection requirements in mixed hardwood stands.*
Wildlife and Fish (FP pages 2-14 to 2-18)	
Timber Harvest Reserve Areas and Reserve Trees*	
G118	Leave and protect existing downed logs greater than 10 inches in diameter (small end diameter) consistent with providing for management access (e.g. skid trails).
G119	Exclude heavy logging equipment from wet areas, excessively steep slopes, or reserved areas within timber harvest units.
Reserve tree guidelines for even-aged managed stands	
G120	Emphasize diversity, cover and (or) mast by reserving tree species such as hemlock, northern white cedar, white pine, red oak, American beech, hickory, ironwood, blue beech, yellow birch, paper birch and other species that may not have strong local or forest wide representation.
G121	Reserve the above-listed tree species in small clumps or islands of trees within clearcuts, overstory removal cuts, and

	other regeneration harvest areas.
G122	Reserve 2 to 5 live trees per acre greater than 11 inches in diameter, or select the largest trees available; and reserve variable size reserve islands/clumps that total up to ½ acre for every 10 acres managed with an even aged harvest.
Reserve snag guidelines for even-aged and uneven-aged managed stands	
G123	Reserve all dead snags and live den trees up to 10 trees/snags per acre, unless they present a safety concern. Emphasize the largest snags and den trees available. Those snags felled for safety reasons should be left on site as coarse woody debris wherever possible. Additional snags will be recruited from live reserve trees.
Wetlands Management	
Guidelines	
G125	Avoid fragmenting shallow water marshes, or large wetlands containing open water, with corridors used for power lines, roads, and trails.
G128	Protect hydrologic functions and maintain hydrologic regimes.
Woodland Ponds - Ephemeral and Permanent	
Ephemeral ponds smaller than one acre:	
G129	Ephemeral ponds smaller than one acre: Do not operate heavy equipment in woodland ponds.
G130	Ephemeral ponds smaller than one acre: Locate landings and roads to avoid erosion and the contribution of sediment into woodland ponds.
G131	Ephemeral ponds smaller than one acre: Do not allow logging slash in woodland ponds. However, selected trees may be dropped and left in ponds where large woody debris would enhance aquatic habitat.
G132	Ephemeral ponds smaller than one acre: Prohibit the operation of heavy equipment during non-frozen conditions within 15 feet of the normal high water mark.
Ephemeral ponds larger than one acre:	
G133	Ephemeral ponds larger than one acre: Do not operate heavy equipment in woodland ponds.
G134	Ephemeral ponds larger than one acre: Locate landings and roads to avoid erosion and the contribution of sediment into woodland ponds.
G135	Ephemeral ponds larger than one acre: Do not allow logging slash in woodland ponds. However, selected trees may be dropped and left in ponds where large woody debris would enhance aquatic habitat.
G136	Ephemeral ponds larger than one acre: Prohibit the operation of heavy equipment during non-frozen conditions within 15 feet of the normal high water mark.
G137	Ephemeral ponds larger than one acre: Do not clearcut within 50 feet of the normal high water mark of these ponds. Individual tree timber harvesting may be done within this zone if there is an emphasis on retaining shade trees and large diameter cavity and nest trees adjacent to the pond.
Permanent woodland ponds smaller than one acre:	

G138	Permanent woodland ponds smaller than one acre: Do not operate heavy equipment in woodland ponds.
G139	Permanent woodland ponds smaller than one acre: Locate landings and roads to avoid erosion and the contribution of sediment into woodland ponds.
G140	Permanent woodland ponds smaller than one acre: Do not allow logging slash in woodland ponds. However, selected trees may be dropped and left in ponds where large woody debris would enhance aquatic habitat.
G141	Permanent woodland ponds smaller than one acre: Prohibit the operation of heavy equipment during non-frozen conditions within 15 feet of the normal high water mark.
G142	Permanent woodland ponds smaller than one acre: Do not clearcut within 50 feet of the normal high water mark of these where they are uncommon (less than one per 10 acres). Where they are common, do not clearcut within 50 feet of at least one-third of the ponds. Individual tree timber harvesting can be done within this zone if there is an emphasis on retaining shade trees and large diameter cavity and nest trees adjacent to the pond.
Permanent woodland ponds larger than one acre:	
G143	Permanent woodland ponds larger than one acre: Use "Wisconsin's Forestry Best Management Practices for Water Quality" (1995 or subsequent revisions) including Riparian Management Zone direction, for guidance on protection.
Upland Wildlife Habitat Management	
G145	Provide for an average of one ruffed grouse drumming log for every 10 acres of aspen clearcut. The log should be 10 inches or more in diameter and at least 12 feet long.
G147	Small permanent forest openings will be located in upland areas and will generally range in size from one to 10 acres. Maintain brush or shrub openings so that no more than 50% of the area is covered by woody vegetation such as hazel, chokecherry, willow, unless the area is being managed for a specific purpose requiring such cover. These areas include remnant or restored barrens communities, frost pockets, and other natural openings.
G48	Constructed openings should be at least 200 feet in diameter, have irregular shapes, and blend with the surrounding landscape.
G149	Use mechanical methods (mowing, disking, hand brushing, chaining, girdling), prescribed fire, or biological means to restore and maintain selected openings to prevent natural succession to woody plants.
G150	Use native species when planting supplemental mast or fruit-bearing trees or other shrubs for wildlife habitat improvement.
G151	Allow natural conversions of upland open areas to forested conditions where open habitat exceeds management area acreage goals. Do not convert natural openings to tree plantations.
Fisheries Habitat Management	
S4	Maintain a minimum of 80% shrub or tree shade (where present) around ground water seeps within cool and cold water systems.

G152	Manage riparian areas so that they contribute large woody debris (LWD) to lakes, ponds, rivers, and streams. LWD characteristics include: (1) At least 10 to 30 pieces per 1,000 feet of shoreline adjacent to uplands, and at least 5 to 20 pieces per 1,000 feet of shoreline adjacent to forested lowlands; (2) Most pieces greater than 12 inches in diameter and some resistant to decay; (3) Many pieces in lakes with strong branches on the boles which hold part of the wood off the bottom; (4) LWD length should be at least 50 to 120 feet long in lakes and wide streams, or a length that is 1 to 2 times bankfull width in narrow-medium width streams (i.e. less than 50 ft wide).
Aspen and Beaver Management	
S5	Aspen patches will not be regenerated within 450 feet of selected Class I, II, and segments of Class III trout streams including their tributaries and spring ponds (see App. DD). Aspen patches will also not be regenerated within 300 feet of all other Class I and II trout streams including their tributaries and spring ponds. Manage vegetation within these zones for species other than aspen, preferably long-lived conifers and northern hardwoods.
G158	Convert from aspen to long-lived conifers and northern hardwoods within 300 feet of all Class I and II trout streams (and their tributaries including spring ponds) and 450 feet of "selected" Class I, Class II, and segments of Class III trout streams and their tributaries including spring ponds (See Appendix DD for a list of selected streams).
Management for Great Blue Heron	
G163	Close roads and trails under Forest Service jurisdiction within 1,320 feet of a heron nest site to vehicular traffic between March 15 and August 1 unless no feasible alternatives exist and use can be justified.
G164	When a heron colony becomes inactive for three consecutive years, restrictions on land use activities can be removed.
G165	Maintain beaver ponds as potential heron and other wildlife habitat where the ponds are not adversely impacting critical resources and facilities.
G166	All land use activities will be excluded within 330 feet of active heron colonies, unless existing activities appear to have been in place before herons began to use the site.
G167	Land use activities that make no significant change in the landscape are permitted within the 330 to 660 foot zone around a great blue heron colony. Activities such as thinning, permanent opening maintenance, and pruning, may occur from August 1 to March 15. Clearcutting, land clearing, and construction activities will not be permitted within this zone.
Management for Osprey	
G168	All land use activities will be excluded from 0 to 330 feet from active osprey nests.
G169	Land use activities, which make no significant change in the landscape, will be permitted within the 330 to 660 foot zone around an osprey nest. Activities such as thinning, permanent opening maintenance, and pruning, may occur from August 1 to March 15. Clearcutting, land clearing, and construction activities will not be permitted within this zone.
G170	Site disturbing land use activities will not be permitted within a zone 660 to 1320 feet from an osprey nest from March 15 to August 1.

G171	All land use activities will be excluded within 0 to 330 feet of active osprey nests, unless existing activities appear to have been in place before ospreys began to use the site.
G172	Land use activities can be permitted after an osprey nest becomes inactive for three consecutive years.
Federal Threatened and Endangered Species (FP pages 2-18 to 2-19)	
Bald Eagle	
S6	Retain restrictions as described in the "Northern States Bald Eagle Recovery Plan" (1983) within 330 feet of the former nest tree site (when a nest disappears, but the tree remains, or other suitable nesting structures are nearby), as long as the bald eagle breeding area is occupied. If the nest tree blows down, and no suitable replacement trees are nearby, all restrictions can be removed.
S7	Remove restrictions in the area beyond 330 feet when a nest is classified as a remnant (i.e., a nest unmaintained and unoccupied for five consecutive years).
G174	Close or relocate roads and trails (under Forest Service jurisdiction) within 1,320 feet of a nest site to vehicular traffic between February 15 and August 1. Waive this requirement only if no feasible alternatives exist and use can be justified.
G175	Reserve known roosting, perching, and potential nest trees within active bald eagle breeding areas.
Eastern Timber Wolf	
S8	Protect wolf den and rendezvous sites by utilizing the following direction contained in the "Wisconsin Timber Wolf Recovery Plan" (1999): (1) Protect wolf den sites (verified by wildlife biologists) and key rendezvous sites as determined by surveys, that have been used within the last two years; (2) Utilize a year-round restriction on land use activities (including tree harvest and road construction) within 330 feet of a wolf den or rendezvous site (human uses of the area will be passively discouraged, and existing trails and logging roads will be closed or rerouted); and (3) within one-half mile of a wolf den or rendezvous site, land use activities such as tree harvest, road construction and maintenance, and mineral core drilling exploration will be prohibited between March 1 and July 31. New road and trail construction will not be permitted within this zone. Roads and trails under Forest Service jurisdiction will be closed on a case-by-case basis.
G176	Do not exceed existing densities of roads open to public vehicles within active wolf territories. This requirement also applies within areas that have a Wisconsin Department of Natural Resources Probability Index of 50 or above, and applies to permanent roads that require routine maintenance and are accessible year-round by two-wheeled drive vehicles (Forest Service Maintenance Level 5, 4, 3, and possibly some Level 2 roads). See "Recovery Plan for the Eastern Timber Wolf," 1992; and the "Wisconsin Wolf Management Plan," 1999.
G177	Do not upgrade roads beyond existing Maintenance Levels within active wolf territories (or areas with a probability index greater than 50).
Regional Forester's Sensitive Species (RFSS) (FP pages 2-19 to 2-24)	
Regional Forester's Sensitive Species (RFSS)	

Note: Some of these species may be found in more than one habitat. In addition, the RFSS list is subject to change and can be found on the web page for the Eastern Region.	
S10	Do not allow the collection of RFSS plants, except for scientific or educational purposes, or for the conservation or propagation of the species. Collection must be authorized by a Forest Service permit.
G178	Vegetation management within 100 to 500 feet of RFSS plant and animal sites will be limited to practices that maintain or enhance habitat and micro-habitat conditions. Animal sites are defined as active nest, active den, or evidence of breeding activity.
G179	Prohibit domestic livestock grazing, and restrict recreation activities as needed within the 100 to 500 foot distance from an RFSS site.
West Virginia White Butterfly	
G181	Protect known locations for toothwort (*Cardamine diphylla*), and maintain at least 80% canopy crown cover over and extending at least 100 feet from the perimeter of known toothwort sites. Avoid isolating toothwort populations from larger blocks of interior forest.
Northern Goshawk and Red-shouldered Hawk	
G185	Protect active and historic nest sites. Within an area of at least 30 acres surrounding nest site(s), land use activities will be limited to those that do not reduce canopy closure or are necessary to protect the nest site for as long as the territory or stand is suitable habitat. No timber harvest will occur within the buffer area. Human disturbance will be minimized within the buffer from February 15 to August 1.
G186	Within a minimum of 330 feet of the designated 30-acre buffer area: Do not use even-aged management.
G187	Within a minimum of 330 feet of the designated 30-acre buffer area:Emphasize at least 80% crown closure with not more than 4 canopy gaps per acre up to 40 feet in diameter.
G188	Close roads and trails under Forest Service jurisdiction to vehicular traffic within 330 feet of a nest site from February 15 to August 1 unless no feasible alternatives exist and use can be justified.
G189	Conduct surveys for these species prior to projects being implemented within potential habitat areas.
Swainson's Thrush	
G192	Protect Swainson’s thrush nesting activitiesfrom May 15 - August 1 by prohibiting disturbance within stands with known nest locations.
G193	Encourage a conifer understory where Swainson’s thrush is present within stands of high quality potential habitat.
Trumpeter Swan	
G197	Maintain adequate impoundment water levels from April 15 to July 15 (no drawdowns), if breeding pairs are present.
G198	Do not permit land use activities, such as timber harvest, recreational development, and construction within 1,320 feet of an active trumpeter swan nest site from April 15 to July 15.

Black-backed Woodpecker	
G201	Maintain a dead conifer habitat component across the landscape to provide feeding and nesting sites for black-backed woodpeckers.
American Marten	
G202	Within areas determined to be occupied by marten (see Glossary for definition of American Marten occupied areas) do the following: Leave 15-25% of potential timber salvage unharvested following large disturbance events (greater than 100 acres) except in salvage situations determined high risk to human safety and/or forest health.
G203	Within areas determined to be occupied by marten (see Glossary for definition of American Marten occupied areas) do the following: Incorporate Management Area 2B Reserve Tree Guidelines (Chapter 3) relative to tree numbers and diameters to even and uneven-age managed stands, where existing tree diameters allow.
Ginseng (Panax quinquefolia)	
G204	Prohibit wild ginseng harvesting on national forest land except as provided by tribal agreements
RFSS Plant Species Found in Upland Hardwood Habitats	
G205	Protect dense bryophyte mats (moss, liverworts, and hornworts) in areas considered highly suitable for Asplenium trichomanes
Forest Health and Disturbance Processes (FP pages 2-25 to 2-26)	
Forest Health	
G226	Manage short-lived pioneer species at rotations that minimize susceptibility to catastrophic events such as large fires and insect outbreaks. Exceptions are made for areas specifically managed or influenced by natural disturbances.
G227	Give preference to mixtures of species and age classes over monocultures and large areas of a single age class. This is especially important in northern hardwoods where sugar maple can dominate a landscape.
Fire Management	
G229	Consider a range of fuel treatment options that include but are not limited to: commercial timber sales, other utilization methods, mechanical treatment, fuel break construction, and prescribed fire.
G230	Introduce diversity into the prescribed burning regime by lengthening burn intervals, allowing fuels and topography to determine intensity, and varying the seasons when prescribed burning is applied.
G233	Focus fuels reduction activities within the urban interface and the areas surrounding the communities at risk.
Non-Native Invasive Species	
S11	Use permissible mechanical, biological, and chemical controls to reduce the spread of non-native invasive species.
	Reduce the importation and movement of non-native invasive plant species across the Forests by taking the following actions:

G234	Avoid the placement of log landings in areas infested with non-native invasive plant species.
G235	Consider non-native invasive plant species treatment when planning prescribed burn projects in areas of heavy weed infestation.
G236	Minimize the need for prescribed burn area fire lines and soil disturbance by using existing barriers where possible.
G237	Utilize staging areas and helispot facilities (for prescribed burning) that are free of non-native invasive plant species.
Pest Management	
G238	Emphasize species diversity, age class distribution, stand density (stocking) levels, and suitable site / species matches when managing vegetation for resistance to pest outbreaks.
G239	Pest management will tier to the 1986 (or latest revision) "Gypsy Moth Management in the United States: a cooperative approach" Final Environmental Impact Statement and Record of Decision.
Heritage Resources (FP page 2-29)	
Heritage Resources	
G260	Utilize the "Programmatic Guide regarding the Operation Maintenance and Development of the Heritage Program" of 1999 or as revised (Programmatic Guide) for guidelines on survey, protection, evaluation, interpretation, personnel certification and mitigation for the heritage resources program.
G261	Human remains and any associated objects must remain in place when they are discovered through project work, natural forces, or vandalism. Subsequent actions should be conducted in accordance with direction found in the "Programmatic Guide."
G262	Complete heritage resource surveys and document any required protective mitigation measures prior to project implementation. Decision documents must display required mitigation measures and evidence of compliance with applicable laws and regulations.
G263	When heritage resources are discovered during Forest Service project implementation, all activities within the vicinity of the discovery area will cease until a professional archaeologist has made an on-site assessment of the discovery, and has consulted with SHPO, ACHP, and other interested parties regarding possible treatment alternatives.
Scenery Management (FP pages 2-29 to 2-33)	
Facilities- Roads, Trails, Recreation Use Areas, and Water Bodies	
Guidelines for High Scenic Integrity Objective (SIO) Areas: The following are high SIO roads, trails, recreation use areas, and water bodies:	
G264	State and County highways, Forest Service scenic byways, designated travel routes to campgrounds and other major recreation use areas, and roads that border established Wilderness areas and designated Wilderness study areas.
G266	Campgrounds and designated trailheads and parking areas (the high SIO zone is 600 feet wide around the perimeter of these areas).

G267	All natural lakes and selected impoundments 10 acres and larger in size, all wild and scenic rivers, and rivers that are normally canoeable and have a history of high recreation use.
G268	Maintain minimal evidence of forest management activities.
G269	Locate temporary openings at least 200 feet from roads (except high speed highways), trails, recreation use areas, and water bodies.
G270	In temporary openings made in jack pine, consider the following: Retain red and white pine trees.
G272	In temporary openings made in jack pine, consider the following: If not counter to reforestation needs, time mechanical treatments to achieve reduction of slash height and to encourage bracken fern and other vegetation to cover slash material.
G273	Temporary openings adjacent to high-speed highways (55 miles per hour speed limits) should be no more than 130 feet long (along the road), should be separated by a minimum distance of 500 feet, and should occupy no more than 400 feet of each mile of road.
G274	Use Table 2-5 guidance when harvesting northern hardwoods within high SIO areas (see Uneven-aged Management of Northern Hardwoods).
Guidelines for Moderate SIO Areas: The following are moderate SIO roads, trails, recreation use areas, and water bodies:	
G275	Maintenance level 5 and 4 arterial and collector roads that are listed and mapped as Moderate in the Forest SIO Map.
G276	All non-motorized trails not included in the high SIO category (except hunter walking trails and trails designed specifically for mountain bike use).
G277	All developed recreation sites not included in the high SIO category (e.g., boat landings and trailheads), and remote campsites on lakes and canoeable rivers.
G278	All canoeable rivers not included in high SIO category.
G279	Forest management activities are moderately evident.
G280	Locate temporary openings: At least 100 feet from the perimeter or edge of recreation use areas, such as campgrounds and trail heads, and canoeable rivers.
G281	Locate temporary openings: No more than a 300-foot distance of temporary opening will be allowed along roads and trails. Such openings will be separated by a minimum distance of 500 feet and will occupy no more than 1,056 feet of each mile of road or trail.
G282	In temporary openings made in jack pine, consider the following: Retain red and white pine trees.
G284	In temporary openings made in jack pine, consider the following: If not counter to reforestation needs, time mechanical treatments to achieve reduction of slash height and to encourage bracken fern and other vegetation to cover slash material.
Guidelines for Low SIO Areas:	
G285	Areas not classified as High or Moderate SIO Areas fall under the low SIO category.
G286	Forest management activities are readily evident.
G287	Reserve some live trees within temporary openings adjacent to remote campsites (see wildlife reserve tree guidelines).

G288	Locate temporary openings at least 100 feet from the edge of lakes and ponds.
G289	Restrictions, if any, on temporary openings along roads and trails will be determined on a site-specific basis during project analysis.
Permanent Openings	
G292	Shape and blend permanent openings created through vegetative management with the adjacent characteristic landscape. Avoid straight lines in the design and layout of these openings.
Reforestation	
Guidelines for High and Moderate SIO Areas:	
G299	Natural reforestation is preferred within high SIO areas. Planting may be done to meet an objective of increasing long-lived species.
G300	Planting within high and moderate SIO areas should be done in a non-linear pattern, within 100 feet of a travel corridor, use area, or water feature.
Tree marking	
G301	Apply tree-marking paint on the sides of trees that face away from travelways, use areas, and water bodies.
Treatment of Residue from Timber Harvest or other vegetation removal activities	
G302	Establish a 10-foot slash removal zone adjacent to travelways, use areas, and water bodies within high SIO areas, and where vegetation management activities have occurred adjacent to private land.
G303	Visible portions of timber harvesting or other vegetation removal areas should receive the primary emphasis for slash treatment.
G307	The following are motorized use area slash height guidelines for the visible area up to 100 feet from the edge of trails, use areas, water bodies, and Maintenance Level 5, 4, and 3 roads: High SIO= slash height less than or equal to 24 inches
G308	The following are motorized use area slash height guidelines for the visible area up to 100 feet from the edge of trails, use areas, water bodies, and Maintenance Level 5, 4, and 3 roads: Moderate SIO= Slash height less than or equal to 24 inches
G309	The following are motorized use area slash height guidelines for the visible area up to 100 feet from the edge of trails, use areas, water bodies, and Maintenance Level 5, 4, and 3 roads: Low SIO= Slash height less than or equal to 36 inches
Temporary Openings	
G310	Borrow from natural or man-made openings in the surrounding landscape, and follow natural boundaries to minimize straight-line opening edges.

G311	Visible temporary opening sizes adjacent to travelways, use area, or water bodies in motorized and non-motorized setting are described below (the primary emphasis is the visible are in the first 200 feet form the travelway, use area, or water body): High SIO (travel speed low, less than 55 mph) - 0 acres visible opening size, 0% travelway or shoreline impacted.
G312	Moderate SIO Areas (travel speed high): 5 acers of less visible opening size, 7.5% travelway or shoreline impacted.
G313	Moderate SIO Areas: 10 acers of less visible opening size, 20% travelway or shoreline impacted.
G314	Low SIO Areas: 40 acres or less visible opening size, 50% travelway or shoreline impacted.
G315	Establish reserve areas when there is a visual need to reduce the apparent size of a temporary opening.
Transportation Systems (FP pages 2-35 to 2-38)	
Road Design, Construction and Reconstruction	
Guidelines for State and County Highways, Forest Service scenic byways, and travel routes to campgrounds and other major recreation use areas that are listed and mapped as High SIO roads in the Forest SIO maps included in map packet:	
G335	Provide consistent construction lines, a smooth finish, and a neat appearance for the final shaping and grading of roadbeds, shoulders, and ditch slopes.
G336	Allow back slopes to be rough, partially covered with scattered woody debris, and, if possible, to re-vegetate naturally.
G337	Plant native or desirable non-native species immediately after construction or reconstruction, where natural re-vegetation is unlikely, or sedimentation and erosion are concerns.
G338	Use accepted guidelines (AASHTO) to establish travelway width.
G339	Allow an average of no more than two side road entrances per mile on each side of a High SIO road.
G340	Reduce clearing limits and maintain tree crown closure over roads (as much as possible).
G341	Consider adjusting the clearing limits or road alignment to reserve trees with outstanding scenic qualities.
G342	Highlight outstanding roadside visual features with turnouts and vistas.
G343	Bury slash and grade to contour, remove it from view, or lop it down to 24 inches in the visible area up to 100 feet from the roadside. Bury or place uprooted stumps out of view from the road.
G344	Incorporate aesthetic modifications into the design of bridges, guardrails, major culverts, outlet ditches, and other drainage control devices.
G345	Brush roadsides on a 5-year cycle.
G346	Use wood or manmade materials with natural appearing colors on signs and posts.
G347	Use High SIO road guidelines for Forest Service road construction and reconstruction and when the Forest has the opportunity to provide road design or maintenance advice to other jurisdictions that have the authority and responsibility to maintain or improve High SIO roads that cross national forest land (e.g., state and county highways).
Guidelines for Maintenance Level 4 and 5 roads that are listed and mapped as moderate SIO Roads in the Forest SIO inventory.	

G348	Apply High SIO road guidelines with the following change: Moderate SIO roads, compared to High SIO roads, may have a rougher appearance and less consistent construction lines. Also, the final shaping and grading of Moderate SIO roadbeds, shoulders, and ditch slopes need not have as neat an appearance as High SIO roads.
Guidelines for All Maintenance Level 5 roads not included in the High or Moderate SIO category and roads that border designated Wilderness and Wilderness study areas.	
G349	Minimize clearing widths by utilizing cut, fill, and back slope grades that are the steepest permissible for safety, soil conditions, and the height of the cut.
G350	Final shaping and grading of shoulders and ditch slopes may be rough in appearance. Back slopes may also be rough in appearance and covered with loose woody debris.
Road Closure	
G351	Restrict weight limits on National Forest System arterial and collector roads when county road weight limits are in effect.
Road Decommissioning and Landscape Restoration	
S28	Decommission classified and unclassified roads that are closed to motorized traffic and identified as not needed for long-term access.
G352	Road decommissioning must render a road inaccessible to all motorized traffic, including all-terrain vehicles. Effectively preventing motorized vehicles from gaining access to any portion of a decommissioned road may involve obstructing access at several points along the road.
G353	Render a road inaccessible by reclaiming the first 300 feet (or the distance necessary to prevent viewing the road from an intersecting or adjacent travelway). This action may involve restoration of the natural topography, scarification of the roadbed (deep disking), utilizing erosion control measures, planting trees, and (or) placing natural obstructions (boulders, downed trees, etc.) in the road in such a way that they appear visually haphazard but effectively restrict access. Use a combination of closure devices, including but not limited to berms, boulders, and downed trees, when rendering a road inaccessible.
G354	Roads identified for decommissioning and made inaccessible may receive one of the following levels of landscape restoration: Minimum Level Restoration: Render roads inaccessible, remove stream crossings, and rehabilitate streambeds and banks. This level of restoration is typically applied to Maintenance Level 3, 2, and 1 dead end roads that have only minimally altered the landscape. The roadbed and clearing have few improvements and natural re-vegetation is likely to occur (little or no additional planting or seeding).
G355	Roads identified for decommissioning and made inaccessible may receive one of the following levels of landscape restoration: Moderate Level Restoration: Render roads inaccessible, remove stream crossings, and rehabilitate streambeds and banks. Remove road improvements that contribute to resource degradation and mitigate road improvements that alter the landscape. Moderate level road restoration measures include (but are not limited to) removing road surfacing (if salvageable), establishing erosion control measures on steep grades and cut and fill slopes, removing fill from wetland crossings, removing cross-drainage structures, and assisting re-vegetation where necessary.

G356	Roads identified for decommissioning and made inaccessible may receive one of the following levels of landscape restoration: Maximum Level Restoration: Render roads inaccessible, and, as much as possible; completely remove all road improvements from the landscape (signs, gates, culverts, etc.). Restore natural topography, wetlands, and watercourses along the length of the road. Scarify (deep disc) the compacted area and reforest or re-vegetate the entire travelway. Maximum Level Restoration is typically applied to remnant portions of Maintenance Level 5, 4, or 3 roads that have been relocated to repair resource damage, where complete removal and restoration of the roadbed is necessary, or where restoration of the natural landscape is a primary goal (Wilderness study areas, SPNM areas, etc.).
G358	Road decommissioning and restoration priorities: Resource protection and (or) restoration.
G359	Road decommissioning and restoration priorities: Abandoned roadbeds and unneeded access roads associated with road relocation.
G361	Road decommissioning and restoration priorities: Meeting desired road densities within Research Natural Areas, Special Management Areas, and Old Growth and Natural Feature Complexes.
G362	Road decommissioning and restoration priorities: Local roads that connect to arterial or collector roads scheduled for reconstruction.
G363	Road decommissioning and restoration priorities: Working towards desired total road density within areas not listed above and shown as 2.0 mile/square mile open road density on Road Density Map.
G364	Render inaccessible and restore skid trails that access local or collector roads and remain open to public traffic (skid trails drivable by high clearance four-wheel drive vehicles). This process may be delayed if roads and skid trails need to be utilized for post sale rehabilitation treatments.
Road and Landing Locations, and Access and Skidding Requirements	
G365	Access logging operations from local or collector roads wherever possible.
G366	When the only logging operations access alternative is from a gravel or paved road, the access road should have a gravel surface for the first 100 feet, unless it is used during frozen ground conditions.
G367	Locate landings a minimum of 100 feet from a collector road. Landings should not be located within the road template of an arterial or town road (including the ditch line and back slope). Landing location exceptions can be obtained with written permission from the township.
G368	Skidding should not occur on arterial or town roads.
G369	Roads should provide access to within a specified skidding distance for timber harvesting operations (road access that provides skidding distances of no more than one-quarter mile in most situations). Some terrain and soil types may allow skidding distances of as much as one-half mile. Consult current research information on economic harvesting and skidding techniques before determining a maximum skid distance in a given terrain and soil type.
Roads Management and Related Soils and Vegetation Impacts	

G370	Minimize road impacts by utilizing soil protection measures described in "Wisconsin's Forestry Best Management Practices," March, 1995 edition (or subsequent revisions), and "Wisconsin's Construction Site Best Management Practices Handbook," November, 1997.
G371	Stabilize road cut and fill slopes using the most effective, natural-appearing, and cost-efficient methods available.
G372	Consider seasonal road use restrictions (with effective closures) for roads that traverse silt-cap soils. Utilize road design modifications that are environmentally sound and minimize erosive rutting on poorly drained soils.
G373	Control erosion and effectively manage water flow on and adjacent to roads by providing adequate roadside and outlet ditches, ditch checks, and cross-drainage.
G374	Plant native or desirable non-native plant species where vegetative cover is needed to stabilize slopes or decommission a travelway.
G375	Insure, to the extent practicable, that road fill and gravel sources do not contain non-native invasive plant species.
G376	Avoid stream and wetland crossings, riparian areas, and frost pockets (whenever possible) when constructing or relocating roads.
Guidelines for Management Areas 2A, 2B, and 2C	
Biological Diversity	
MA 2A:	
G382	Extend the rotation age of aspen. This is a site quality determination but do not exceed 70 years where aspen is to be regenerated.
MA 2A and 2B:	
G389	Retain long-lived conifers and hardwoods as reserve trees within aspen clearcuts. Where long-lived trees are not present—retain short-lived conifers if they are available.
G390	Maintain white pine and hemlock within 300 feet of rivers with a bankfull width of 50 feet or larger.
G391	Increase closed canopy continuity within northern hardwood blocks. Increase the average patch size of northern hardwoods by converting aspen inclusions within the larger northern hardwood blocks.
MA 2A, 2B, and 2C:	
G392	Manage riparian corridor forest types (especially within 300 feet of rivers with a bankfull width of 50 feet or larger) primarily under uneven-aged management systems and at maximum rotations.
Reserve Tree Guideline for Uneven-Aged Managed Stands:	
MAs 2A and 2C:	
G393	Reserve 3 to 7 live trees per acre larger than 11 inches. Focus on the largest trees available.
MA 2A, 2B, and 2C:	

G396	Emphasize the retention of long-lived conifers such as hemlock and white pine (as a component of the reserve live tree numbers). In addition, reserve other tree species that are not well represented in the stand or on the Forests (yellow birch, paper birch, red oak, white oak, American beech, etc.).
Guidelines for Management Areas 4A, 4B, and 4C	
Biological Diversity	
MA 4A:	
G409	Maintain at least 80% of the existing jack pine within the MA.
MAs 4A, 4B, and 4C:	
G417	Reserve scattered white pine, red pine, and oak trees within jack pine clearcuts.
Reserve Tree Guidelines for Uneven-Aged Managed Stands:	
MAs 4A and 4C:	
G418	Reserve 3 to 7 live trees per acre larger than 11 inches. Focus on the largest trees available.
MAs 4A, 4B, and 4C:	
G421	Emphasize the retention of long-lived conifers such as hemlock and white pine (as a component of the reserve live tree numbers). In addition, reserve other tree species that are not well represented in the stand or on the Forests (yellow birch, paper birch, red oak, white oak, American beech, etc.).
Fire Management	
MAs 4A, 4B, and 4C:	
G422	Emphasize prescribed fire for fuels reduction treatments. Where feasible, combine fuels reduction treatments with ecological restoration activities using prescribed fire.
Standards and Guidelines for Management Area 8D	
Vegetation	
G423	Management encourages longer-lived species such as white pine, red pine, hemlock, sugar maple, yellow birch, and white spruce.
G424	Even-aged management practices will not be visible from any point on the Pine and Popple River and will not be permitted within 400 feet of river banks.
G425	Timber harvesting within 150 feet of the river will be for the purpose of establishing long-lived, large diameter trees such as white pine, red pine, hemlock, northern white cedar, white spruce, and to lesser extent red maple, red oak, and sugar maple.

All Fourmile Project's Possible Forest Plan Variances

- Proposed temporary openings over 40 acres (guideline listed on Forest Plan at 2-4)

Compartment	Stand	Acres of Opening
189	14	49
211	5	124
219	13	102
218	20, 30, 31, 35, 41	76